PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of	)	
	)	Atty. Docket No. 8313
MISZCZAK ET AL.	)	
	)	Examiner M. Elve
Appl. No. 09/227,242	)	
	)	Art Unit 1725
Filed 8 January 1999	)	

For: "Ultra Low Carbon Metal-Core Weld Wire"

FAX RECEIVED NOV 20 2002

REQUEST FOR REINSTATEMENT OF APPEAL UNDER 37 CFR 1.193(b)(2)(ii)

Assistant Commissioner for Patents
Washington D.C. 20231

SIR

Kindly reinstate the appeal filed originally on 21 March 2002 in response to the final Official Action of 3 October 2002. A Supplemental Appeal Brief is attached.

No Fee are due in connection with the submission of the Supplemental Appeal Brief. The Appeal Brief fee was paid previously on 21 June 2002. See MPEP 1208.02.

Respectfully submitted,

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PATENT
Expedited Procedure
Supplemental Appeal Brief
Under 37 CFR 1.192

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SUPPLEMENTAL APPEAL BRIEF UNDER 37 CFR 1.192

Assistant Commissioner for Patents
Washington D.C. 20231

SIR:

Change in Claim Status

In the final Official action of 3 October 2002, from which the instant appeal is taken, Claims 21-22 and 25 stand allowed. Claims 4, 6-7 and 17-20 were indicated as being allowable but stand objected to for dependence on rejected claims.

The appeal of allowed or allowable Claims 4, 6-7, 17-20, 21-22 and 25 is hereby withdrawn.

Claims 1, 3, 5, 8-13, 15-16, 23-24 and 26-27 stand rejected and are the subject of the instant appeal. The appealed claims are appended in the section entitled "Claims Pending on Appeal".

Status of Amendments

There is no change in the status of the amendments since the filing of the original appeal brief on 21 June 2002.

New Issues for Consideration on Appeal

1. Whether Claims 9-10, 12-13, 16, 23-24 and 26-27 are indefinite under 35 U.S.C. § 112, second paragraph.

2. Whether Claims 1, 3, 5, 9-10, 12-13, 16 are anticipated under 35 U.S.C. § 102 by U.S. Patent No. 5,824,992 (Nagarajan).

3. Whether Claims 1, 3, 5, 8-13, 15 and 16 are obvious under 35 U.S.C. § 103 in view Nagarajan.

Grouping of Claims

The appealed claims do not stand or fall together for reasons discussed more fully below.

Discussion Of Issue 1

Examiner's Allegation

Claims 9-10, 12-13, 16, 23-24 and 26-27 stand rejected on new grounds

under 35 U.S.C. 112, second paragraph.

Upon re-opening prosecution, in the non-final Official action of 26 July 2002, the Examiner asserts that it is "unknown" whether the "... combinations of Fe-Mn, Fe-Si, Fe-Ti and Fe-Mn-Si ... are merely combined or compounds." In the final Official Action of 3 October 2002, para. 1, the Examiner reasserts the rejection, apparently without giving consideration to the remarks in Applicants' communication filed on 23 August 2002 that the combinations at issue are compounds.

Applicants' Argument

The examiner's confusion about the asserted indefinite nature of the rejected claims is unclear. The Examiner appears to concede that the rejected subject matter is a combination of elements, otherwise known in the art as compounds.

As noted previously, the referenced claim limitations are compounds, as indicated by hyphenated linkage of the constituent elements. Those of ordinary skill in the art recognize Fe-Si, Fe-Mn, Fe-Ti and Fe-Mn-Si as being compounds, which generally have different properties than the properties of the constituent elements Fe, Si, Ti and Mn.

In the instant specification, grammatically, the use of the hyphen (-) between the element abbreviation terms at issue (Fe-Si; Fe-Mn; Fe-Ti; and Fe-Mn-Si) indicates by definition that the individual elements (Fe, Si, Ti and Mn) are combined by the hyphen to form compound words. These compound words correspond indisputably to compound compositions, rather than the individual constituent elements. If the terms Fe, Si, Ti and Mn were intended to be representative of individual elements, as the Examiner contends, the terms would be separated by

commas. That the elements are interconnected by hyphens, however, indicates indisputably that the hyphenated elements are compounds.

The rejection under 35 U.S.C. 112, second paragraph, is improper and must be withdrawn.

Discussion Of Issues 2 & 3

Examiner's Allegation

Claims 1, 3, 5, 9-10, 12-13 and 16 stand finally rejected on new grounds under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 5,824,992 (Nagarajan) or alternatively for obviousness in view of Nagarajan. Official Action, 3 October 2002, paras. 3-6.

The Examiner notes that Nagarajan discloses a metal core weld wire having a steel sheath with a carbon content between 0.005 % and 0.150 % and a core composition of 13-45 % total wire weight. Official Action, 3 October 2002, para. 4.

The Examiner concedes generally that the ranges claimed are outside those of the prior art but contends that the claimed ranges would have been obvious because close approximation in the prior art "... is considered to establish a prima facie case of obviousness [citations omitted]." Official Action, 3 October 2002, para. 6. The Examiner's particular assertions supporting the rejections of the claims are discussed more fully below.

Applicants' Argument For Allowability of Claim 1

Claim 1 recites a metal-core weld wire having a sheath, the sheath comprising

... a carbon content less than 0.005 % C ...."

Contrary to the Examiner's contention, the carbon content of the weld wire sheath of Claim 1 is not physically the same as the carbon content between 0.005 % and 0.150 % in the sheath disclosed by Nagarajan. Claim 1 recites that the carbon content "... is less than 0.005 % C ... [emphasis added]."

There is no disclosure or suggestion in Nagarajan to reduce the carbon content of the weld wire to "... less than 0.005 % C ..." as recited in Claim 1. Nagarajan is concerned with reducing oxygen content, not with fume reduction, and thus there is no suggestion in Nagarajan to reduce the carbon content in the sheath below 0.005 %. Moreover, there is no recognition in Nagarajan of a relationship between reduced fume production and the carbon content range in Claim 1. Nagarajan teaches reduces oxygen, not carbon content. On this basis alone, the Applicants contend that the Examiner's obviousness presumption based on the proximity of the carbon content in Nagarajan is improper. See *In re Antonie*, 195 USPQ 6, 9 (CCPA 1977) (Failure to recognize a result-effective variable or range outside a known range is an exception to the rule of the presumption of obviousness.). Claim 1 and the claims that depend therefrom are thus patentably distinguished over Nagarajan.

Examiner's Failure to Consider Secondary Considerations

To the extent that the Examiner's reliance on Nagarajan states a prima facie case of obviousness (due to the proximity of the lower limit of the carbon range disclosed therein to the upper limit of the carbon content recited in the claims) Applicants reply and Affidavit under 37 CFR 1.132 overwhelmingly rebut the

presumption.

Evidence of secondary considerations must always be considered when assessing claims under 35 USC 103. MPEP §§ 716.01(d) and 2144.08, yet the Examiner appears not to have given any weight to the Affidavit submitted under 37 CFR 1.132. The Examiner offers no discussion of the Affidavit in connection with the rejection under 35 USC 103 or Applicants' rebuttal of the presumption of obviousness.

As noted previously, the subject Affidavit establishes a clear nexus between the subject matter of the claimed inventions and the commercial embodiments thereof, and particularly that weld wire having the composition of claimed inventions are the subject of commercial success.

The Affidavit and supporting factual evidence establish that the subject matter of the claimed inventions overcome problems in the art; namely, low fume producing metal-core weld wires that comply with industry strength and toughness specifications. The low fume weld wires of the present invention were developed partly in response to industry demand, and address problems heretofore unsolved by others.

The Affidavit and supporting evidence also establish that the metal-core weld wires of the present invention are commercially successful, and more particularly that the sales of low fume metal-core weld wires of the present invention were substantial upon its introduction into the marketplace because of the substantial fumes reduction without loss of performance characteristics, which is what industry required. Particularly relevant to the commercial success of the present invention is the fact that, for at least one large customer's applications, the metal-core weld wires of the present invention substantially displaced the use of flux-core weld wires, which generate substantial amounts of fumes.

The remarks, above especially when taken in consideration with the

enclosed Affidavit under 37 CFR 1.132, overwhelmingly defeat the Examiner's tenuous allegations of obviousness in view of Nagarajan. The ultimate determination of patentability must be based on consideration of the entire record, by preponderance of evidence, with due consideration to the persuasiveness of any arguments and any secondary considerations. MPEP §§ 716.01(d) and 2144.08.

Claim 1 and the Claims that depend therefrom are thus patentably distinguished over Nagarajan.

Applicants' Argument For Allowability of Claim 3

Claim 3, dependent from Claim 1, recites "... the total weight of the metal-core weld wire comprises between approximately 0.005 % C and approximately 0.013 % C." Claim 1 limits the amount of carbon in the sheath to "... less than 0.005 % C ...", and thus the balance of the carbon is in the metal-core composition.

The Examiner's rejection of Claim 3 fails to consider that the limitations of Claim 3 concern the carbon content of the weld wire core composition rather than the carbon content of the weld wire sheath. In contrast to Claim 3, Nagarajan does not specify any carbon in the weld wire core. Nagarajan discusses only the carbon content of the sheath, which corresponds to the total carbon content of the weld wire of Nagarajan (0.005-.015 % C). For these reasons, as well as the secondary considerations discussed above, Claim 3 is patentably distinguished over Nagarajan.

Applicants' Argument For Allowability of Claim 5

Regarding Claim 5, contrary to the Examiner's assertion, Nagarajan does not disclose or suggest a steel sheath that "... comprises between approximately

0.35 % Mn and approximately 0.45 % Mn" in combination with the limitations of Claim 1. Claim 5 is patentably distinguished over Nagarajan at least for the reasons set forth above regarding the allowability of Claim 1.

Applicants' Argument For Allowability of Claim 8

Regarding Claim 8, contrary to the Examiner's assertion, Nagarajan does not disclose or suggest a "... metal-core composition comprising not more than approximately 0.0047 % C ..." in combination with the limitations of Claim 1.

As noted above in connection with the discussion of the allowability of Claim 3, Nagarajan discusses only the carbon content of the wire sheath, not the carbon content of the core composition. The Examiner's fails to consider that the limitations of Claim 8 are drawn to carbon content in the weld wire core composition rather than in sheath. Moreover, the Examiner fails to recognize that Nagarajan does not disclose or suggest carbon in the weld wire core. For these reasons, as well as the secondary considerations discussed above, Claim 8 is patentably distinguished over Nagarajan.

Applicants' Argument For Allowability of Claim 9

Regarding Claim 9, contrary to the Examiner's assertion, Nagarajan does not disclose or suggest a "... metal-core composition comprises between approximately 1.23 % Fe-Mn and approximately 1.56 % Fe-Mn" in combination with the limitations of Claim 1.

The Examiner's rejection of Claim 9 is based on the incorrect premise that the limitation "Fe-Mn" corresponds to separate elements, rather than a

compound. Nagarajan does not disclose or suggest the use of a "Fe-Mn" compound in the weld wire composition. The Examiner's suggestion that the individual elements Fe and Mn disclosed by Nagarajan are equivalent to the "Fe-Mn" compound limitation of Claim 9 lacks a scientific basis or legal precedent. For these reasons, as well as the secondary considerations discussed above, Claim 9 is patentably distinguished over Nagarajan.

Applicants' Argument For Allowability of Claim 10

Regarding Claim 10, contrary to the Examiner's assertion, Nagarajan does not disclose or suggest a weld wire core composition comprising "... between approximately 2.40 % Fe-Si and approximately 3.60% Fe-Si, between approximately 10.86 % Fe-Mn-Si and approximately 16.30 % Fe-Mn-Si, between approximately 0.44 % Fe-Ti and approximately 0.66 % Fe-Ti, and the balance Fe powder" in combination with the limitations of Claim 1.

The Examiner's rejection of Claim 10 is based on the incorrect premise that the limitations "Fe-Si", "Fe-Mn-Si" and "Fe-Ti" correspond to separate elements, rather than compositional compounds. Nagarajan does not disclose or suggest the use of the "Fe-Si", "Fe-Mn-Si" and "Fe-Ti" compounds in a weld wire composition. The Examiner's suggestion that the individual elements Fe, Si, Ti and Mn disclosed by Nagarajan are equivalent to the "Fe-Si", "Fe-Mn-Si" and "Fe-Ti" compound limitations of Claim 10 lacks a scientific basis or legal precedent. For these reasons, as well as the secondary considerations discussed above, Claim 10 is patentably distinguished over Nagarajan.

Applicants' Argument For Allowability of Claims 11 and 15

Regarding Claim 11, contrary to the Examiner's assertion, Nagarajan does not disclose or suggest a "... metal-core composition [ ] between approximately 17 % and approximately 19 % of the total weight of the metal-core weld wire, the metal-core composition comprising not more than approximately 0.0046 % C" in combination with the limitations of Claim 1.

Regarding Claim 11, contrary to the Examiner's assertion, Nagarajan does not disclose or suggest a "... metal-core composition comprising not more than approximately 0.0046 % C" in combination with the limitations of Claim 1.

As noted above regarding the allowance of Claims 3 and 8, Nagarajan neither discloses nor suggests anything about carbon content in the weld wire core composition. Nagarjan discusses only carbon in the weld wire sheath. For these reasons, as well as the secondary considerations discussed above, Claims 11 and 15 are patentably distinguished over Nagarajan.

Applicants' Argument For Allowability of Claim 12

Regarding Claim 12, contrary to the Examiner's assertion, Nagarajan does not disclose or suggest a "... the metal-core composition comprises between approximately 17 % and approximately 19 % of a total weight of the metal-core weld wire, and the metal-core composition comprising not more than approximately 1.62 % Fe-Mn" in combination with the limitations of Claim 1.

As discussed above regarding the allowability of Claim 9, the Examiner's rejection of Claim 12 is based on the incorrect premise that the limitation "Fe-Mn" corresponds to separate elements, rather than a compositional compound. Nagarajan however does not disclose or suggest the use of the "Fe-Mn" compound in the weld wire composition. The Examiner's suggestion that the individual

elements Fe and Mn disclosed by Nagarajan are equivalent to the "Fe-Mn" compound limitation of Claim 12 lacks a scientific basis or legal precedent. For these reasons, as well as the secondary considerations discussed above, Claim 12 is patentably distinguished over Nagarajan.

Applicants' Argument For Allowability of Claim 13, 16, 23, 24

Regarding Claim 13, contrary to the Examiner's assertion, Nagarajan does not disclose or suggest a "... the metal-core composition comprising not more than approximately 3.15% Fe-Si, not more than approximately 14.26 % Fe-Mn-Si, not more than approximately 0.58 % Fe-Ti, and the balance Fe powder" in combination with the limitations of Claim 1.

Regarding Claim 16, contrary to the Examiner's assertion, Nagarajan does not disclose or suggest a "... metal-core composition comprises approximately 18 % of a total weight of the metal-core weld wire, and the metal-core composition comprises approximately 3.00 % Fe-Si, approximately 13.58 % Fe-Mn-Si, approximately 0.55 % Fe-Ti, approximately 1.54 % Fe-Mn, and the balance Fe powder" in combination with the limitations of Claim 1.

Regarding Claim 23, contrary to the Examiner's assertion, Nagarajan does not disclose or suggest a "... metal-core composition comprises between approximately 1.46 % Fe-Mn and approximately 1.62 % Fe-Mn" in combination with the limitations of allowed base claim, independent Claim 21.

Regarding Claim 24, contrary to the Examiner's assertion, Nagarajan does not disclose or suggest a "... the metal-core composition comprises between approximately 2.85 % Fe-Si and approximately 3.15% Fe-Si, between approximately 12.90 % Fe-Mn-Si and approximately 14.26 % Fe-Mn-Si, between approximately 0.52

% Fe-Ti and approximately 0.58 % Fe-Ti, and the balance Fe powder and trace impurities" in combination with the limitations of allowed base claim, independent Claim 21.

Regarding Claim 26, contrary to the Examiner's assertion, Nagarajan does not disclose or suggest a "... the metal-core composition comprising not more than approximately 1.56 % Fe-Mn" in combination with the limitations of allowed base claim, independent Claim 21.

Regarding Claim 27, contrary to the Examiner's assertion, Nagarajan does not disclose or suggest a "... metal-core composition comprising not more than approximately 3.60% Fe-Si, not more than approximately 16.30 % Fe-Mn-Si, not more than approximately 0.66 % Fe-Ti, and the balance Fe powder" in combination with the limitations of allowed base claim, independent Claim 21.

The Examiner's rejection of Claims 13, 16, 23, 24, 26 and 27 is based on the incorrect premise that the limitations "Fe-Si", "Fe-Mn-Si" and "Fe-Ti" correspond to separate elements, rather than compositional compounds. Nagarajan does not disclose or suggest the use of the "Fe-Si", "Fe-Mn-Si" "Fe-Mn" and "Fe-Ti" compounds in a weld wire core composition. The Examiner's suggestion that the individual elements Fe, Si, Ti and Mn disclosed by Nagarajan are equivalent to the "Fe-Si", "Fe-Mn" "Fe-Mn-Si" and "Fe-Ti" compound limitations of Claim 13, 16, 23, 24, 26 and 27 lacks a scientific basis or legal precedent. For these reasons, as well as the secondary considerations discussed above, Claims 13, 16, 23, 24, 26 and 27 are patentably distinguished over Nagarajan.

The remarks above addressing the rejections under 35 U.S.C. 103, especially when taken in consideration with the perfected Affidavit under 37 CFR 1.132, overwhelmingly defeat the Examiner's tenuous obviousness allegations. Kindly reverse and vacate the rejections of Claims 1 and 3-27 and instruct the

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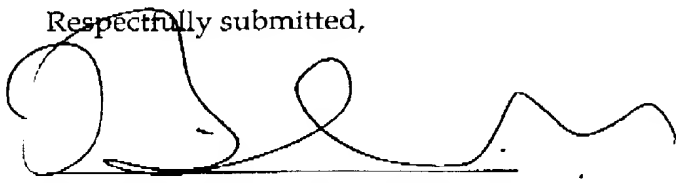
Examiner to allow said Claims to issue as a United States Patent without further delay.

Respectfully submitted,



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Claims Pending On Appeal

1. (Once Amended) A metal-core weld wire for gas shielded welding, comprising:

a low carbon steel sheath having a carbon content of less than 0.005 % C;

a metal-core composition between approximately 16 % and approximately 20 % of a total weight of the metal-core weld wire,

whereby the metal-core weld wire has a relatively reduced fume generation rate.

3. (Once Amended) The metal-core weld wire of Claim 1, the total weight of the metal-core weld wire comprises not more than approximately 0.013 % C.

5. (Not Amended) The metal-core weld wire of Claim 1, the steel sheath comprises between approximately 0.35 % Mn and approximately 0.45 % Mn.

8. (Once Amended) The metal-core weld wire of Claim 1, the metal-core composition comprising not more than approximately 0.0047 % C.

9. (Not Amended) The metal-core weld wire of Claim 1, the metal-core composition comprises between approximately 1.23 % Fe-Mn and approximately 1.56 % Fe-Mn.

10. (Not Amended) The metal-core weld wire of Claim 1, the metal-core composition comprises between approximately 2.40 % Fe-Si and approximately 3.60% Fe-Si, between approximately 10.86 % Fe-Mn-Si and approximately 16.30 % Fe-Mn-Si, between approximately 0.44 % Fe-Ti and approximately 0.66 % Fe-Ti, and the balance Fe powder.

11. (Once Amended) The metal-core weld wire of Claim 1, the metal-core composition is between approximately 17 % and approximately 19 % of the total weight of the metal-core weld wire, the metal-core composition comprising not more than approximately 0.0046 % C.

12. (Once Amended) The metal-core weld wire of Claim 1, the metal-core composition comprises between approximately 17 % and approximately 19 % of a total weight of the metal-core weld wire, and the metal-core composition comprising not more than approximately 1.62 % Fe-Mn.

13. (Once Amended) The metal-core weld wire of Claim 12, the metal-core composition comprising not more than approximately 3.15% Fe-Si, not more

than approximately 14.26 % Fe-Mn-Si, not more than approximately 0:58 % Fe-Ti, and the balance Fe powder.

15. (Twice Amended) The metal-core weld wire of Claim 12, the metal-core composition comprising not more than approximately 0.0046 % C.

16. (Not Amended) The metal-core weld wire of Claim 1, the metal-core composition comprises approximately 18 % of a total weight of the metal-core weld wire, and the metal-core composition comprises approximately 3.00 % Fe-Si, approximately 13.58 % Fe-Mn-Si, approximately 0.55 % Fe-Ti, approximately 1.54 % Fe-Mn, and the balance Fe powder.

23. (Not Amended) The metal-core weld wire of Claim 22, the metal-core composition comprises between approximately 1.46 % Fe-Mn and approximately 1.62 % Fe-Mn.

24. (Not Amended) The metal-core weld wire of Claim 23, the metal-core composition comprises between approximately 2.85 % Fe-Si and approximately 3.15% Fe-Si, between approximately 12.90 % Fe-Mn-Si and approximately 14.26 % Fe-Mn-Si, between approximately 0.52 % Fe-Ti and approximately 0.58 % Fe-Ti, and the balance Fe powder and trace impurities.

26. (Once Amended) The metal-core weld wire of Claim 21, the metal-core composition comprising not more than approximately 1.56 % Fe-Mn.

27. (Once Amended) The metal-core weld wire of Claim 26, the metal-core composition comprising not more than approximately 3.60% Fe-Si, not more than approximately 16.30 % Fe-Mn-Si, not more than approximately 0.66 % Fe-Ti, and the balance Fe powder.